

## **Pilot Tests of Adsorptive Media Arsenic Treatment Technologies in the Arsenic Water Technology Partnership**

Malynda Aragon, Malcolm D. Siegel, Randy Everett, Alicia Aragon, William Holub, Jr, Jerome Wright and Brian Dwyer, Sandia National Laboratories, MS-0754, Albuquerque, NM 87185-0754

As a member of the Arsenic Water Technology Partnership, Sandia National Laboratories has carried out field scale pilot tests to obtain performance data on arsenic removal at three different locations in New Mexico. The pilots are located in Socorro, Anthony, and Rio Rancho. Eight adsorption media have been tested, including 3 iron oxyhydroxides, two titanium oxides, a zirconium oxide, and 2 resins with active metal oxide surfaces or nanoparticles. Well waters at the sites span a range of chemical and physical characteristics such as temperature, pH, arsenic content and speciation, and silica and dissolved solids concentrations. Each pilot demonstration site has three participants (Sandia National Laboratories, the technology providers, and the site owner) with specific roles and responsibilities.

The results of the studies provide estimates of the capacity (bed volumes until breakthrough at 10 ppb arsenic) of adsorptive media in chlorinated water, information about the durability of the media, and evaluation of performance under different operating conditions. The data from the field tests are supplemented with laboratory studies to allow a more robust evaluation of media performance. The flow experiments (pilot and laboratory columns) are designed to measure the number of bed volumes (BV) of water passing through the media columns until the regulatory limit (10 ppb) is exceeded in the effluent.

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### **BIO Info:**

Malynda Aragon, M.S., is the lead engineer for the Arsenic Treatment Technology Pilot Demonstration Program at Sandia National Laboratories. She received a BS in chemical engineering from the University of New Mexico and a M.S. in chemical engineering from UC Davis. She has experience in the fields of industrial water treatment, waste water treatment and water conservation. Ms. Aragon has been involved in several projects including increasing cooling tower water efficiency, reclaim water usage in cooling towers, and implementing the High Efficiency Reverse Osmosis (HERO) system. Her current projects include three pilot demonstration projects in New Mexico at Socorro, Anthony, and Rio Rancho New Mexico.